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ABSTRACT

In March 1974, a study was undertaken at Northwestern University to examine the role of the library in providing information services based on computerized data bases. After taking an inventory of existing data bases at Northwestern and in the greater Chicago area, a committee suggested ways to continue and expand the scope of information services. This report gives a flow chart conception of existing information services, and, using a management approach, discusses how the library can mobilize resources to maximize information service. Major recommendations include: (1) establishment of contracts with commercial search services, (2) placement of two terminals in the library, (3) use of the New York Times Information Bank, and (4) continuation of existing batch services in addition to new on-line services available through commercial firms. (EMH/PF)

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THE LIBRARY AS LEADER: COMPUTER ASSISTED INFORMATION SERVICES AT NORTHWESTERN UNIVERSITY

A Report of the NULCAIS Committee on the Present Status, and Proposals for the Future, of Computer Assisted Information Services at Northwestern University Library

Members of the Northwestern University Library Computer Assisted Information Services (NULCAIS) Committee:

James Aagaard
Leslie Bjorncrantz
Dee Brooks
Adele Combs
Elizabeth Furlong
Bruce Miller
Mary Roy
Thein Swe
Guy Westmoreland
Helen Yarbrough

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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SUMMARY OF THE REPORT

In March of 1974, Northwestern University Library's Committee on Computer Assisted Information Services (NULCAIS) undertook a study to make recommendations for the role of the Library in providing information services based on computerized data bases. The study set out to identify and describe those data bases and services existing and available at Northwestern and also those in the greater Chicago area accessible to Northwestern affiliates. Largely on such an inventory and upon the qualitative and quantitative aspects of that inventory, the Committee sought to suggest ways and means in which computerized information services could be continued, and, if feasible, expanded in scope at Northwestern. The existence of services both at Northwestern and in the surrounding areas has been presented in flow-chart form with accompanying explanations on the processes charted. In the suggestions for the continuation and expansion of services the report has taken a management approach in that the marketing of services, i.e. the allocation of resources, distribution of service points or nodes, the division of labor between service points including personnel involved has been stressed. In addition, the report discusses the relative advantages between batch and on-line services, and, in essence, addresses itself to how best the Library can mobilize its resources to maximize its information services.

Outline of Recommendations

The crux of the recommendation contained in this report is that the Library should, as an intermediary, continue and expand its activities in providing information and document retrieval services to its clients through reliance upon computerized data bases. This recommendation does not preclude various groups on campus such as departments and schools to act as end-users in their own attempts to retrieve information. Rather, the recommendation is presented within the milieu of the Library as a source for information and in the context of changing patterns and developments in the abstracting and indexing activities predominant in the information handling world.

Specifically, the report calls for:

1. Discontinuation of subscription to National Technical Information Service (NTIS) [same data base will be available through Systems Development Corporation (SDC) and Lockheed],
2. Contractual arrangements to be made between the Library and commercial outlets such as SDC and Lockheed,
3. A terminal to be placed in the Reference Department and a terminal in the Tech. SDI Office with hours of service as suggested,
4. The Library to subscribe to the New York Times Information Bank,
5. Continuation of existing batch services in addition to new on-line services as they are available through commercial firms, and,
6. Personnel identification and grouping as recommended in the organization chart on page 25.

SUMMARY OF THE REPORT: COSTS

Estimated Costs for 1975-76 for SDI Services Recommended by NULCAIS

Training (one-time costs)

Lockheed and SDC training seminars (Fees and transportation to Palo Alto, Calif., for 2 seminars for 2 people)	$ 1,000.
Staff training for 12 staff members $45 - Average cost per hour of computer time $10 - TYMSHARE cost per hour $55 - Total cost per hour	
12 staff mem. x 2 hr./staff mem. x $55/hr.	$ 1,320.

Equipment costs

Telephone line in Reference Department	$ 50. yr.
Telephone line in Technological Institute Library	$ 50. yr.
Terminal costs 2 terminals x $140/mo. rental x 12 mo./yr.	$ 3,360. yr.
Subtotal	$5,780.

Staff and professional time costs

Professional time 3,500 searches/yr. x 1/2 hr./search x $6.00/hr.	$10,500. yr.
Staff time 3,500 searches/yr. x $ .64/search	$ 2,240. yr.
Total	$18,520

SUMMARY OF THE REPORT: TIMETABLE

Timetable for Establishment of On-line Services via SDC and Lockheed at NUL

1. Naming of Social Science and Science Coordinators [Duties include responsibility for planning marketing approaches and maintenance and development of current and future offerings of computer assisted information services at NUL in their respective subject areas, with technical advice from the Information Systems Development Office.] - within two weeks after approval of NULCAIS report.

2. Ordering two terminals, one for the Reference Department and one for the Tech. Library - within one month after approval of NULCAIS report.

3. Signing contracts with Systems Development Corporation (SDC) and Lockheed - within one month after coordinators are named (Point no. 1).

4. Training of 2 librarians at training institutes outside NUL - within two months after signing contracts with SDC and Lockheed (Point no. 3).

5. In-house training of prospective profilers at NUL - within one month after arrival of terminals in Reference Department and in Technological Institute Library.

6. Initiation of SDC and Lockheed on-line services at NUL - within one month after arrival of terminals in Reference Department and in Technological Institute Library.

7. Initial marketing of on-line services (strategy and methods planned by the coordinators) - within one week after the services have been initiated.

8. Acquisition of New York Times Information Bank - within nine months to one year after the SDC and Lockheed services are operational.

INTRODUCTION TO THE FULL REPORT

Two fundamental assumptions have been made about the Library's role in the provision and management of computer assisted information services at Northwestern University. The first of these two assumptions is that the increase in need for bibliographic information in support of teaching, learning, and research is a direct result of an exponential growth of literature in recent years. Based on this assumption, therefore, is the stipulation that the demand for increasing information and the supply found in the proliferation of literature can only be equalized through reliance upon non-conventional means of bibliographic control and literature retrieval. The conclusion follows that literature information services must, of necessity, go beyond traditional boundaries and practices and seek the advantages and assistance of computerized data bases.

The second assumption is that expressed needs for computer assisted information services prevalent among the academic community at Northwestern are sufficiently intense to warrant the Library's involvement and dedication in attempts to meet such needs.

Given these two assumptions and the fact that the Library is already engaged in providing some computer assisted information service to its patrons, the NULCAIS committee has prepared the following report containing recommendations for future acquisition, delivery, and management of computer assisted information services on a larger and more comprehensive scale. The report is divided along the sections listed below:

I. Description of existing data bases, services, and tasks at service points in the Northwestern University Library System.

II. Description of data bases, services, and tasks at service points in the Library System if contracted with commercial services.

III. Relative advantages of on-line and batch processing systems.

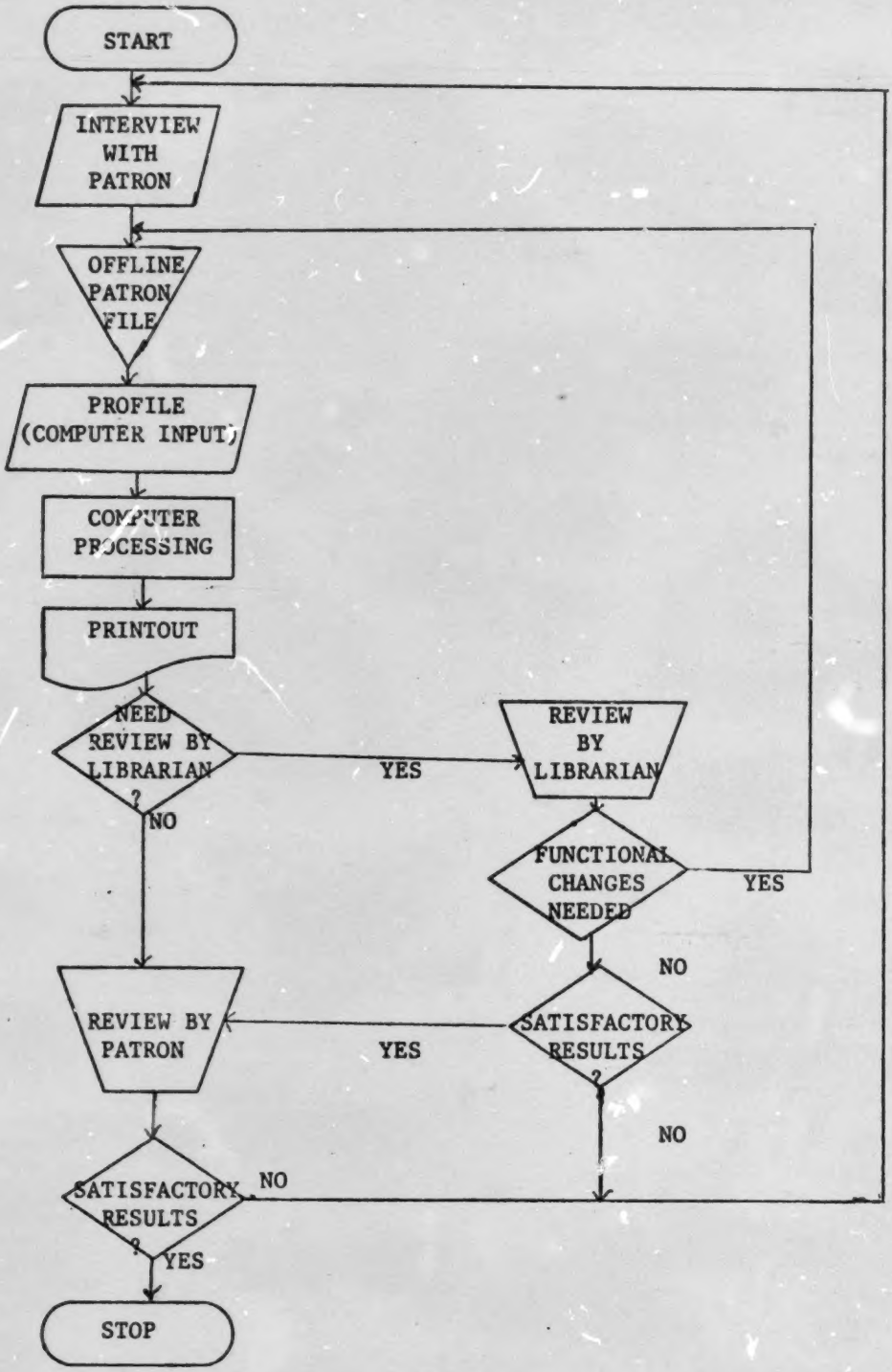
IV. Suggestions for possible combinations of existing batch services and contracted commercial on-line services.

V. Operation of on-line services at NUL service points.

VI. Recommendation for the acquisition of the New York Times Information Bank.

PART I. Description of Existing Data Bases, Services, and Tasks at Service Points in the Northwestern University Library System.

A. Flow-chart of Services and Tasks



B. General Description of Services and Tasks

1. Type of Service

Two types of services are available from Northwestern University Library: Retrospective searching allows searches of any part of all of the tapes which we have in a specific data base; current awareness searching allows a client to put his search on file to search all new tapes arriving for a specific data base.

2. Service Points

Note the location listed under each service.

3. Clients

Questions may be submitted by faculty, staff, and students of Northwestern University.

4. Interview Time

Unless otherwise noted the time is from 8:30 a.m. to 5:00 p.m. Monday to Friday.

5. Profiler

The librarian designated to interview the patron varies with the department. Note the profiler listed under each service.

6. Profiles

During the instruction-interview process, the librarian and client construct a search profile on the client's research area/s, using (a) Profile Development Record Forms(s). Details of construction and logic operations are added or rewritten by the librarian, usually after the interview. Upon further analysis of the profile and/or investigation of the question/s, the librarian may consult the client again in person or by telephone before finalizing the profile.

7. Profile Form Keypunching

The profile record as constructed for keypunching is keypunched by the SDI Assistant, by the librarian, or by keypunchers supplied by Circulation Services. For the current awareness file, an update for the new profile's addition to the complete file of standing questions is also prepared and keypunched at this time.

8. Proof Reading Cards

Punched cards are proof read by the department from which they originate or the coordinating department.

9. Card Deliveries

Cards are delivered to the Administrative Data Processing Center for processing.

10. Retrospective Computer Search Procedure

Cards are processed by the computer by comparing them to the tapes on file for the data base requested.

11. Current Awareness Search Procedure

Patrons' profiles are maintained on disk storage and searched against each new update tape of the data base the patron has requested.

12. Printouts

Printouts are returned to the coordinator whose department requested the search. The coordinator supervises the processing of the printouts for distribution to clients. Student assistants* do the actual processing such as separating printouts by number, matching them with copies of the original profile form, recording statistics on the number of hits found for each search, identifying each search by the client's name, and delivering the printouts to the appropriate department. The student assistant* also records statistics for these searches. Statistical data includes the number of hits for the profile, the date, and the CPU time.

a. For Retrospective Searches

The printout always goes to the librarian who wrote the profile for review.

b. For Current Awareness Searches

The printouts should be reviewed by the librarian who wrote the profile, the first three or four times that it is returned and about every fifth run thereafter to insure that it is returning all pertinent information. Otherwise the statistics should be recorded and it should be sent to the patron (Step 16).

13. Functional Changes

The profile is reviewed for any errors that were made in the formatting of the question and returned to Step 6 to correct the profile on file.

14. Results

If the results of the search are not satisfactory the patron should be asked to return for further interview. Otherwise the printout is ready for the patron.

* The SDI Assistant has these responsibilities at the Tech. SDI Office

15. Review by Patron

The patron calls* for his printout at the service point where he made the request. For those on campus who request it, printouts can be mailed through the campus mail. The patron should review his printout and ask for another interview with the librarian if the results are not satisfactory.

16. Advertising and Marketing

Advertising, marketing and promotion of the SDI services are handled by the coordinators. Recommendations and suggestions from other librarians about possible clients to contact are sought and welcome.

17. Charging

Some of the SDI services are partially paid for by the patrons. Note the charges listed for the service.

Each service is listed on the following pages.

* The Tech. SDI Office delivers the printouts to patrons in Tech., Hogan and the Science Libraries.

C. Chart of Existing Data Bases at NUL and Service Points

NUL SERVICE POINTS / EXISTING SERVICES	CURRICULUM	MANAGEMENT	PUBLIC/URBAN AFFAIRS	REFERENCE DEPARTMENT	SCIENCE LIBRARIES	TECHNOLOGICAL INSTITUTE	TRANSPORTATION
ASCA (Automatic Subject Citation Alert)					X	X	X
Chemical Abstracts					X	X	
ERIC	X	X	X	X			X
Government Reports Announcements						X	X
NASA/SCAN						X	
TRIS							X

D. Existing Science Data Bases and Services at NUL

1. ASCA (Automatic Subject Citation Alert) Computerized Literature Search

a. Scope of the Data Base

ASCA, a service of the Institute for Scientific Information, is "an individualized, computer-produced weekly alerting service providing multidisciplinary coverage of over 3,200 journals"[1] in the fields of "Applied Science, Engineering and Technology, Medicine, Psychology and Psychiatry, and the Behavioral Sciences,"[2]

b. Type of Service - Current Awareness

c. Service Points - Technological Institute Library's SDI Services Office

d. Profilers - Information Services Librarian - SDI Assistant

e. Card Punching and Processing

The finalized profile is duplicated by the SDI Services Office. The profile is mailed to the Institute for Scientific Information through the U.S. Mail. The SDI Office retains a copy of the profile and sends a copy to the client. The Institute for Scientific Information staff prepares the profile for the current awareness searching, done weekly by the ISI.

f. Receipt of ISI Printouts

Weekly printouts are received in the Tech. Inst. Library with the delivery of the U.S. Mail. The Information Services Librarian retrieves the printouts from the delivery area.

g. Charging

At quarterly intervals, the librarian and SDI assistant compute quarterly charges for the service, based on the quarterly invoice received from the Institute for Scientific Information. The SDI Office compiles a journal voucher and submits it to the NU Budget Office.

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[1] Encyclopedia of Information Systems and Services, edited by Anthony T. Kruzas (2nd edition; Ann Arbor, Mich.; Edwards Bros., 1974), p 272.

[2] Annual Review of Information Science and Technology, edited by Carlos A. Cuadra, Vol. VII (Washington: American Society for Information Science, 1972), p.343.

2. Chemical Abstracts Condensates Computerized Literature Search

a. Scope of the Data Base

This data base consists of entries, in condensed form, that appear in printed editions of Chemical Abstracts. "Full bibliographic data is given, but the abstract is replaced by a set of keywords drawn from it."[3] The topics covered in this data base are Organic Chemistry, Biochemistry, Inorganic Chemistry, Physical Chemistry, and Chemical Engineering.

b. Type of Service - Current Awareness

c. Service Points - Technological Institute Library's SDI Services Office

d. Profilers - Information Services Librarian - SDI Assistant

e. Charging

At quarterly intervals, the librarian and SDI assistant compute quarterly charges for these services, compile a journal voucher and submit it to the NU Budget Office for processing.

3. Government Reports Announcements Computerized Literature Search

a. Scope of the Data Base

The National Technical Information Service (NTIS) is the source for this data base primarily composed of government-sponsored research and development reports in the applied and biological sciences, and, to a lesser extent, the behavioral and social sciences.

b. Type of Service - Current Awareness

c. Service Points - Technological Institute Library's SDI Services Office - Transportation Center Library

d. Profilers - Information Services Librarian - SDI Assistant - Transportation Center Librarians

e. Charging

At quarterly intervals, the librarian and SDI assistant compute quarterly charges for these services, compile a journal voucher and submit it to the NU Budget Office for processing.

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[3]Lorraine Mathies and Peter G. Watson, Computer Based Reference Service, (Chicago: American Library Association, 1973), p.155.

4. NASA/SCAN Computerized Literature Search

a. Scope of the Data Base

The National Aeronautics and Space Administration/Selected Current Aerospace Notices service was designed to complement NASA's Scientific and Technical Aerospace Reports and International Aerospace Abstracts abstract journals with a supplementary announcement service for specific and specialized subject interests. The NASA Scientific and Technical Information Office distributes SCAN computer-generated bibliographies for standardized profiles covering about 200 separate topics arranged in approximately 34 broad subject groups. These topics and profiles reflect the most frequently encountered patterns of interest currently expressed by aerospace professionals. Biweekly, each SCAN topic profile is searched for citations in the latest literature. One bibliographic printout is produced for each topic. The printouts are reproduced inexpensively and copies are distributed to SCAN representatives at participating organizations, in quantities which they have requested.

b. Type of Service - Current Awareness

c. Service Points - Technological Institute Library's SDI Services Office

d. Profiler - Information Services Librarian - SDI Assistant

e. Procedure

Clients select standardized profile topics from the NASA/SCAN brochure. The clients' requests are mailed to the NASA Scientific and Technical Information Facility.

f. Receipt of Printouts from NASA

NASA/SCAN printouts are mailed from NASA to the NUL Government Publications Department along with all other NASA publications addressed to the Library. Packets of SCAN printouts are received approximately every two weeks. The packets are forwarded by the Government Publications Department to the Technological Institute Library and picked up by the Information Services Librarian or the SDI Assistant.

g. Delivery of Printouts to Clients

The SDI assistant sorts and counts copies of topics and prepares delivery/mailing packets for each client. Each client's copies are delivered to his mailbox in the Technological Institute or in Hogan, or to the appropriate Science Library, or are mailed via campus mail.

h. Revisions

Although revisions may be made at any time, present clients are given the opportunity to review their complete sets of requests and add or delete topics in an annual renewal conducted by the SDI office.

i. Advertising and Marketing

NASA/SCAN is advertised and marketed through the SDI Services Office.

j. Charging

The NASA/SCAN service is free of charge.

5. TRIS - ON - LINE Computerized Literature Search

a. Scope of the Data Base

TRIS-ON-LINE, a component of the Transportation Research Information Services Network (TRISNET) under development by the U.S. Department of Transportation, consists of a set of computer-based information files recording the technical reports, journal articles, books, papers and research in progress on transportation subjects. The package consists of a set of files covering DOT work in progress, highway, railroad and maritime transportation and special compilations on demand bus service, energy, and noise. Access is provided through the Basis 70 system at Battelle Columbus Laboratories. The Northwestern University terminal is located at the Transportation Center Library.

b. Type of Service - Retrospective Searches

c. Service Points - Transportation Center Library

d. Procedure

Users may visit or telephone the Transportation Center Library to register a request, where a staff librarian will assist in selecting search terms. If possible, requests should be made twenty-four hours in advance of the search and the user should be present during the search to provide additional input on search strategy and printout format.

e. Delivery of Printout to Client

The search response consists of a series of citations to publications and/or research projects with the associated abstracts or resumes if requested. An on-line or an off-line printout may be obtained. In the latter case, Battelle mails the response to the user.

f. Charging

Students and faculty are charged for the on-line searches at Battelle rates: $45 per computer hour and $3.75 per 1000 lines for off-line printout plus Tymnet costs (about $10 per hour). Charges are based on Battelle computer time indicated at the end of the on-line search. Users will be billed for the services; searches charged against Northwestern accounts may be journaled by the user's department.

E. Existing Social Science Data Bases at NUL

1. ERIC (Educational Resources Information Center) Computerized Literature Search

a. Scope of the Data Base

ERIC collects, organizes and disseminates educational research reports and other resource information. ERIC announces significant documents (research reports, conference proceedings, literature reviews, survey reports, program descriptors, bibliographies) in Research in Education (1966--), the ERIC monthly bibliography. ERIC also indexes journal articles in the monthly ERIC periodical index, Current Index to Journals in Education (1969--).

b. Type of Service - Retrospective and Current Awareness Searches

c. Service Points - Reference Room
Curriculum Collection
Management Library
Public/Urban Affairs
Transportation Library

d. Profilers - Reference Librarians
Curriculun Collection Librarian
Management Librarians
Public/Urban Affairs Librarian
Transportation Librarians

e. Coordinator

The coordinator for all service points is the Social Sciences Coordinator.

PART II - DESCRIPTION OF DATA BASES, SERVICES, AND TASKS AT SERVICE POINTS IN THE NU LIBRARY SYSTEM IF THE LIBRARY CONTRACTS WITH COMMERCIAL DATA SERVICES.

A. Summary of Lockheed and Systems Development Corporation (SDC) Search Service Rates.

	Data Base	Hourly Rate	Off-line Printing	TYMSHARE Hourly Communications
	SDC/CAIN	30.00	.08/citation	10.00
SCIENCES	SDC/CHEMCON	45.00	"	"
	SDC/COMPENDEX	90.00	.20/citation	"
	*SDC/GEO-REF	60.00	.15/citation	"
	*SDC/MEDLINE	80.00	"	"
	*SDC/MEDCOMP	80.00	"	"
	SDC/NTIS	45.00	.10/citation	"
	*SDC/SCISEARCH	90.00	.25/citation	"
	SDC/ERIC	25.00	.08/citation	10.00
SOCIAL	SDC/INFORM	45.00	.10/citation	"
SCIENCES	*SDC/MARC	to be added to SDC service in the future		
	SDC/NTIS	45.00	.10/citation	10.00

	Data Base	Hourly Rate	Off-line Printing	TYMNET Hourly Communications
	Lockheed/CHEMCON	45.00	.10/citation	10.00
SCIENCES	*Lockheed/CMA/EMA	60.00	"	"
	Lockheed/COMPENDEX	55.00	"	"
	*Lockheed/INSPEC	45.00	"	"
	Lockheed/NAL/CAIN	25.00	"	"
	Lockheed/NTIS	35.00	"	"
	*Lockheed/PANDEX	35.00	"	"
	*Lockheed/TRANSDEX	35.00	"	"
	Lockheed/ERIC	25.00	.10/citation	10.00
SOCIAL	*Lockheed/Exceptional Children Abstracts	25.00	"	"
SCIENCES	*Lockheed/AIM/ARM	25.00	"	"
	*Lockheed Psychological Abstracts	50.00	"	"
	Lockheed/ABI/INFORM	45.00	"	"
	Lockheed/NTIS	35.00	"	"
	*Lockheed/SSCI	70.00	"	"

*Starred data bases are handled by either SDC or Lockheed, but not by both companies.

B. Science Data Bases Available from Lockheed Missiles and Space Company's On-Line DIALOG Information Retrieval Service. (For further description of Lockheed service, see page 14, no. 1)

The Lockheed off-line printing rate is $ .10 per citation for full

record, prorated for shorter formats. There are no minimum usage requirements or subscription charges of any kind. The TYMNET data communications network may be used at the rate of $10.00 per hour.

1. CHEMICAL ABSTRACTS CONDENSATES ($45/hr) - Some 600,000 records from the Chemical Abstracts Service covering 1972 to present.

2. CHEMICAL AND ELECTRONIC MARKET ABSTRACTS (CMA/EMA) ($60/hr) - Over 28,000 abstracts of domestic and foreign information on all chemical process and electronics and data processing equipment industries. Produced by Predicasts, Inc.

3. COMPENDEX (ENGINEERING INDEX) ($55/hr) - Over 200,000 citations and abstracts from 3,500 journals, publications of engineering organizations, and selected government reports and books; published world-wide. File growth is at the rate of 84,000 citations and abstracts per year.

4. INSPEC (SCIENCE ABSTRACTS) - Abstracts from the Institution of Electrical Engineers; covers from 1969 to present. INSPEC data bases include:

   Computer and Control Abstracts ($45/hr) - Over 110,000 abstracts embracing all areas of computers and control engineering.

   Electrical and Electronics Abstracts ($45/hr) - Over 200,000 abstracts covering 300 subject areas encompassing electrical and electronic engineering.

   Physics Abstracts ($45/hr) - Over 400,000 abstracts from 120 journals covering world-wide literature.

5. NAL/CAIN ($25/hr) - The complete Bibliography of Agriculture file from the National Agricultural Library, including the contents of the NAL catalog. Over 475,000 citations of agriculture-related material. File growth is at the rate of 140,000 citations per year. File coverage is from 1970 to present and includes the recently added Food and Nutrition file.

6. NTIS ($35/hr) - The complete Government Reports Announcements file from the National Technical Information Service. Over 400,000 abstracts of government research from over 240 agencies. File dates back to 1964, is updated every two weeks, and is growing at the rate of 60,000 abstracts per year.

7. PANDEX ($35/hr) - The Macmillan Information Company's Current Index to Scientific and Technical Literature, including extensive biomedical coverage. Over 900,000 titles and bibliographic citations from some 2,400 journals. Covers 1971 to present.

8. TRANSDEX ($35/hr) - Some 150,000 citations to document translations from U.S. Joint Publications Research Service (Macmillan Information Company).

C. Science Data Bases Available from Systems Development Corporation (SDC) Using Their On-line "ORBIT II" Retrieval Program.

1. CAIN - The CAtaloging and INdexing data base produced by the National Agriculture Library provides comprehensive world-wide coverage of the journal

and monographic literature on agriculture and related subject fields. Includes special Food and Nutrition Collection. Searches may be restricted to the most recently entered segment of the file for on-line current awareness searching.

From January 1970 - 475,000 citations to date
Monthly updates of 12,000 citations

$30.00 per hour - off-line printing at $ .08 per citation
TYMSHARE communications at $10.00 per hour

2. CHEMCON - Chemical Abstracts CONDENSATES, which provides world-wide comprehensive coverage of the literature in all fields of chemistry, is a weekly current awareness service that contains information from the corresponding issues of Chemical Abstracts. Searches may be restricted to the most recently entered segment of the file.

   From January 1972 - 700,000 citations to date
   Biweekly updates of 15,000 citations

   $45.00 per hour - off-line printing at $ .08 per citation
   TYMSHARE communications at $10.00 per hour

3. COMPENDEX - Produced by Ei, Engineering Index, Inc., Compendex is the data base corresponding to monthly issues of The Engineering Index. It provides worldwide literature coverage from over 3500 publications (such as journals, transactions, proceedings of conferences and symposia) for all disciplines of engineering. Searches may be restricted to the most recently entered segment of the file.

   From January 1970 - 300,000 citations to date
   Monthly updates of 6000 citations

   $90.00 per hour - off-line printing at $ .20 per citation
   TYMSHARE communications at $10.00 per hour

4. GEO-REF - The Geological Reference file produced by the American Geological Institute provides world-wide coverage of the geosciences literature in 21 different fields, by indexing 3000 journals and additional conferences, symposia, and major monographs.

   From January 1967 - 200,000 citations to date
   Monthly updates of 3000 citations

   $60.00 per hour - off-line printing at $ .15 per citation
   TYMSHARE communications at $10.00 per hour

5. MEDLINE - MEDlars On-LINE is a subset of the MEDLARS (Medical Literature Analysis and Retrieval System) file on the world's biomedical literature, developed by the National Library of Medicine. Two files are available for on-line searching:

   Medline - contains 533,000 records from over 1100 biomedical journals; coverage 1970-1973

MedComp - a new file from January 1974, covering 2400 biomedical journals, updated each month with 20,000 new references

SDC/Medline and SDC/MedComp services are provided through the cooperation of the Pharmaceutical Manufacturers Association

$80.00 per hour - off-line printing at $ .15 per citation (each file)
TYMSHARE communications at $10.00 per hour

6. NTIS - The file covers citations and abstracts of government-sponsored research and development reports, of other government analyses prepared by Federal agencies or their contractors and grantees, and of Federally-sponsored translations and some foreign-language reports in areas of major technical interest. Citations in the NTIS data base are announced in Weekly Government Abstracts and Government Reports Announcements. Subject coverage is broad and cross-disciplinary. Searches may be restricted to the most recently entered segment of the file.

From January 1970 - 400,000 citations
Biweekly updates

$45.00 per hour - off-line printing at $ .10 per citation
TYMSHARE communications at $10.00 per hour

7. SCISEARCH - The SCISEARCH file is produced by the Institute for Scientific Information and covers all editorial items (eg., journal articles, reviews, editorials) in more than 1100 of the world's most important life sciences journals, for comprehensive coverage of all disciplines within the life sciences. SCISEARCH has ISI's unique citation-searching capability. Searches may be restricted to the most recently entered segment of the file.

From April 1972 - 400,000 citations
Monthly updates of 16,000 citations

$90.00 per hour - off-line printing at $ .25 per citation
TYMSHARE communications at $10.00 per hour

D. Social Science Data Bases Available From Lockheed Missiles and Space Company's On-Line "Dialog Information Retrieval Service"

1. Scope of the Lockheed On-Line Service Provided for the Social Science Data Bases Listed Below.

The Lockheed Dialog Information Retrieval Service provides access to terminals in user offices from data bases stored online at the Information Sciences computer center. Using the Lockheed information retrieval language, a searcher can perform the following functions:

- Display, identification and selection of terms or phrases which characterize the search interest.

- Combination or coordination of terms or phrases into a search expression

- Display or printout of intermediate search results for examination, allowing modification of search expression, including enhancement and restructuring without restarting the search and without loss of intermediate results

- High-speed printout of complete or selected search results and delivery to user.

Clients pay solely on the basis of actual usage as measured by terminal - connect time and number of off-line prints. There are no minimum, subscription, or membership fees of any kind. A simple purchase order will suffice to initiate service.

2. List of Social Science Data Bases Available From Lockheed.

a) ERIC - The complete file of educational materials from the Educational Resources Information Center of the National Institute of Education and other sources; covering 1966 to present with subfiles:

Research in Education (RIE) - 70,000 abstracts of Educational Research in the areas of curriculum development, learning disabilities, educational technology, and others.

Current Index to Journals in Education (CIJE) - 68, 000 abstracts of journal articles in education.

Filed Reader Catalog - Abstracts of consultants specializing in education (noncurrent).

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMNET Hourly Communications
$25.00	$ .10/citation	$10.00

b) EXCEPTIONAL CHILDREN ABSTRACTS - 12,000 abstracts of material of a particular interest in this field. This file is produced by the Council for Exceptional Children; the file dates from 1966 to present

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMNET Hourly Communications
$25.00	$ .10/citation	$10.00

c) ABSTRACTS OF INSTRUCTIONAL AND RESEARCH MATERIALS (AIM/ARM) - 7000 abstracts of instructional and research materials, indexed by the Center for Vocational and Technical Education, Ohio State University; covers 1966 to present.

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMNET Hourly Communications
$25.00	$ .10/citation	$10.00

d) PSYCHOLOGICAL ABSTRACTS - Over 150,000 abstracts to journal articles in psychology, dates from 1967. Issued by the American Psychological Association.

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMNET Hourly Communications
$50.00	$ .10/citation	$10.00

e) ABSTRACTED BUSINESS INFORMATION (ABI/INFORM) - Over 14,000 abstracts from business and financial journals in the areas of marketing, finance, and economics, etc. covers 1971 to present.

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMNET Hourly Communications
$45.00	$ .10/citation	$10.00

f) NTIS - The complete Government Reports Announcements file from the National Technical Information Service. Over 400,000 abstracts of government research from over 240 agencies including NASA, DDC, AEC, HEW, HUD, DOT, Commerce and many others. File dates back to 1964, is updated every two weeks, and is growing at a rate of 60,000 abstracts per year.

A. Includes a section on the social and behavior sciences.

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMNET Hourly Communications
$35.00	$ .10/citation	$10.00

g) SOCIAL SCIENCE CITATION INDEX (SSCI). The SSCI data base covers citations from 1971 to the present, including nearly 300,000 records. Over 75,000 new entries are added each year.

The SSCI is a multidisciplinary data base indexing every significant item from the 1000 most important social sciences journals throughout the world and social sciences articles selected from 2200 additional journals in the natural, physical and biomedical sciences. The SSCI includes many important monographs as well.

The SSCI covers every area of the social and behavioral sciences:

Anthropology	Educational Research	Management
Archaeology	Ethnic group studies	Marketing

Area studies	Geography	Political science
Business & finance	History	Psychology
Communication	Information/library science	Psychiatry
Community health	International relations	Sociology
Criminology & penology	Law	Statistics
Demography	Linguistics	Urban planning & development
Economics	Philosophy	

A special service allows DIALOG searchers to use their own terminal to order journal articles from the ISI Original Article Tear Sheet (OATS) Service.

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMNET Hourly Communications
$70.00	$ .10/citation	$10.00

E. Social Science Data Bases Available From Systems Development Corporation (SDC) Using Their On-Line "ORBIT II" Retrieval Program.

1. ERIC (Educational Resources Information Center) is the educational data base developed and maintained by the National Institute of Education. Users may restrict searches to either the report (RIE) or the Journal (CIJE) parts of the file.

   Coverage: January 1966 to date
   Total Citations to date: 164,000
   Updates are monthly at the rate of 2500 per month

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMSHARE Hourly Communications
$25.00	$ .08/citation	$10.00

2. INFORM is a business management data base produced by ABI, Inc. ABI provides comprehensive coverage of the literature in such areas as finance, management, economics, statistics, business law, and marketing. Major feature articles are abstracted from almost 300 journals.

   Coverage: August 1971 to date
   Total citations to date: 14,000
   Updates are monthly at the rate of 900 per month

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMSHARE Hourly Communications
$45.00	$ .10/citation	$10.00

3. MARC - NUL presently receives MARC tapes for technical processing purposes.

4. NTIS - The National Technical Information Service (NTIS) of the U.S. Department of Commerce prepares a file covering citations and abstracts of government-sponsored research and development reports, and other government analyses prepared by Federal agencies or their contractors and grantees. Coverage also includes Federally-sponsored translations and some foreign-language reports in areas of major technical interest. Citations contained in the NTIS data base are announced in the Weekly Government Abstracts (WGA) and the semi-monthly Government Reports Announcements (GRA).

   Coverage: January 1970 to date
   Total Citations to date: 400,000
   Updates are bi-weekly

Search Service Rate Schedule:

Hourly Rate	Off-line Printing	TYMSHARE Hourly Communications
$45.00	$ .10/citation	$10.00

F. Chart Representing NUL Service Points for On-Line Systems

NUL SERVICE POINTS	CURRICULUM	MANAGEMENT	PUBLIC/URBAN AFFAIRS	REFERENCE DEPARTMENT	SCIENCE LIBRARIES	TECHNOLOGICAL INSTITUTE	TRANSPORTATION
CONTRACTED SERVICES							
LOCKHEED:							
ABI/Inform (p.16)		X					
AIM/ARM (p.15)	X			X			
Chemical Abstracts (p.12)					X	X	
CMA/EMA (p.12)						X	
Compendex (p.12)						X	
ERIC (p.15)	X		X	X			
Exceptional Children (p.15)	X			X			
INSPEC (p.12)						X	
NAL/CAIN (p.12)						X	
NTIS (pp.12, 16)				X		X	X
PANDEX (p.12)						X	
Psych Abstracts (p.16)				X			
Soc. Sci. Cit. Index (p.16)				X			
Transdex (p.12)						X	
NEW YORK TIMES:							
New York Times Information Bank (pp.33-37)				X			
SDC:							
API LIT							
API PAT							
CAIN (p.12)						X	
CHEMCON (p.13)					X	X	
COMPENDEX (p.13)						X	
ERIC (p.17)	X		X	X			
GEO-REF (p.13)						X	
INFORM (p.17)		X					
MEDLINE (p.13)					X	X	
NTIS (pp.14, 17)				X		X	X
SCISEARCH (p.14)						X	

PART III - RELATIVE ADVANTAGES OF ON-LINE AND BATCH PROCESSING COMPUTER ASSISTED INFORMATION SERVICES

A. Sciences

The acquisition of on-line service by the SDI Services Office, of the Technological Institute Library, would tremendously increase the capabilities of information service, allowing the Library to provide several specialized services to a much broader range of interests and departments than is possible now or has been in the past several years. Clients from departments such as Biological Sciences, Civil Engineering, Mechanical Engineering and Astronautical Sciences, Industrial Engineering and Management Sciences, Computer Sciences, Electrical Engineering, Physics, Biomedical Engineering, and Materials Science would have their research needs met more fully by INSPEC, COMPENDEX, MEDLINE, PANDEX, etc. than can now be accomplished by Chemical Abstracts and ASCA only. Without contracting for on-line services, the Library cannot afford the costs of providing the literature services more valuable to the engineering departments. Without contracting for on-line service, literature needs for these departments will continue to be met inadequately by the Library's present computerized services.

Chemical Abstracts is an excellent service for the Chemistry Department, Chemical Engineering Department, and certain areas of the other departments mentioned above. The present current awareness batch processing serves thirty-eight faculty and research groups on a total of ninety-one profiles every two weeks. Because of this large number of current awareness questions, the Chemical Abstracts batch service cannot be replaced by the on-line service. To rely solely on on-line service for chemical literature searching would necessitate terminal interaction on 1549 terms running on the even CA issues and on 959 terms running on the odd CA issues. Clients running questions on both sets of issues now receive printouts weekly; SDC/Chemcon is updated biweekly. On-line service for Chemical Abstracts should supplement the batch service, for the users who need less frequent review of recent literature. Both SDC and Lockheed provide Chemical Abstracts coverage back to January 1972; NUL's file dates back only to the end of 1972.

The present current awareness weekly search on ASCA serves twenty faculty and research groups on a dozen profiles. The total number of terms for these searches is about two-hundred fifty. As noted, present service provides weekly printouts; SDC's on-line service is updated monthly. Maximum service from ASCA would be offered to library users if the current awareness service is maintained and the on-line service is added. With the addition of on-line service, the Library will be able to fulfill the many requests for searches of the past several years of "ASCA" literature.

The Library's Government Reports Announcements file is less used than Chemical Abstracts or ASCA. This service currently provides biweekly printouts on eleven questions for six faculty members. These profiles might resonably be transferred to on-line searches, since most of the questions average twelve to fifteen terms and the updates are biweekly, not weekly. To transfer GPA magnetic tape subscription costs to the cost of an on-line terminal for SDC and Lockheed would result in greater utilization of the NTIS service, adding a retrospective capability back to 1970, in addition to providing many other data bases and search capabilities for Library access.

B. Social Sciences

Since the library's only experience with computer assisted information services in the social sciences has been with ERIC, it is the data base most readily compared in the two modes, i.e., batch vs. on-line.

Present cost per search of ERIC searches - batch mode

1.	Cost of Tape subscription ($80 per quarter, average of 25 searches per week)	$ 0.25
2.	Average cost of professional staff time for average search of 30 minutes (assume $6 per hour, excluding overhead)	$ 3.00
3.	Average weekly cost of keypunching (assume average of 25 searches per week at $3.50 per hour.)	$ 0.14
4.	Average cost of CPU time of an ERIC search yielding 100 citation printouts	$14.00
5.	Average weekly cost of clerical processing of ERIC printouts (include $0.40 for distribution and $0.14 for fund transferral, excluding overhead)	$ 0.54
6.	Total average cost of an ERIC search yielding 100 citation printouts	$17.93

Projected costs per search of ERIC on-line:

1.	Average cost of professional staff time for a 30 minute search (exclude overhead)	$ 3.00
2.	Projected cost of a 30 minute search yielding 100 citation printouts (based upon $12.50 computer connect time, $5.00 for Tymshare communications charge and $0.10 per citation)	$27.50
3.	Projected cost of clerical processing time for a printout received from on-line search (includes $0.50 for distribution and $0.14 for fund transferral)	$ 0.64
4.	Total projected costs for a 30 minute on-line search yielding 100 printouts (excluding cost of terminal)	$31.14

5A.	Total projected costs for a 30 minute on-line search yielding 100 printouts, including terminal cost (for rental of appropriate model terminal at $140 per month, or $1.40 per search at 25 searches per week)	$32.54
5B.	Total projected costs for a 30 minute on-line search yielding 100 printouts, including terminal cost (for purchase of appropriate model terminal at $2800, or $1.08 per search at 25 searches per week) prorated over 2 years, and service contract fee of $200 per year (or 0.15 per search)	$32.37

As can be seen from the totals indicated above (17.93 - batch vs. 31.14 - on-line), the library can offer computer assisted searches of the ERIC data base in batch mode cheaper than on-line through a contracting firm. This is due, in part, to the comparatively inexpensive costs of the ERIC update tapes. For this reason it is strongly urged that the library continue to offer ERIC batch searches even if it becomes necessary to establish a fee for the service to help defray the cost. However, it is urged that the library can offer a needed service to its users by offering ERIC and the other social science data bases on-line through the contracting firms.

After absorbing the initial purchase costs ($2800) of a terminal or rental costs ($140/month), the library would incur no additional costs in providing on-line services unless it chooses to. The CAIS client would be billed for the cost of his search. But for many users, the advantage of having ERIC and other social science data bases available on-line will soon become apparent and they will become more accustomed to paying for information as they do for other important commodities.

Through Lockheed, the library and its clients would not only gain on-line access to the ERIC data it now has in the batch mode, i.e., Research in Education and Current Index to Journals in Education, but also Exceptional Children Abstracts and Abstracts of Instructional and Research Materials (AIM/ARM). These are important ERIC data bases and offer much requested and used data for library clients in the fields of education, communicative disorders, psychology and others.

Not only would the library's clients gain on-line access to all of these ERIC data bases, but they would have the advantages offered through on-line capability that are not present in the batch mode. Some of these advantages for ERIC include the ability to search on many different fields (i.e., author, words in title or abstract, identifier, etc.) that cannot be searched in our batch mode. This added sophistication in search technique increases the possibility of retrieving a greater amount of relevant material on a given search.

Other advantages of the library contracting with SDC and Lockheed for on-line services include: access to additional data bases without the costs of acquiring additional software or hardware (except a terminal), no programming required, no keypunching, no costs for updating the data base, and no storage or handling problems with additional computer tapes. The advantages of the search negotiation process are also impressive, namely: greater number of data elements as searchable fields, more sophistication and/or versatility in search strategy, and immediate feedback as to the accuracy of the search.

PART IV - RECOMMENDATIONS FOR POSSIBLE COMBINATIONS OF EXISTING BATCH AND PROPOSED ON-LINE COMPUTER ASSISTED INFORMATION SERVICES

In order to provide new services to departments not being served as adequately as possible by existing services and to provide increased retrospective searching capabilities for library users, the NULCAIS committee recommends that the Library contract with Systems Development Corporation (SDC) and Lockheed for the provision of on-line computer assisted information services. The committee suggests that two terminals be acquired, one to be placed in the Reference Department and the other at the Technological Institute Library. These terminals may also be used for technical services operations at scheduled time periods.

The Library should retain the existing batch services Chemical Abstracts and ASCA because these services are well used and provide current awareness service more economically than can be provided with interactive searching for the number of profiles involved. The Library should also retain its ERIC batch service which will be sufficient for those who do not require the sophistication of an on-line search of ERIC and which could be offered either free of charge or for a much lower fee than the on-line service would require.

The NULCAIS committee also recommends that the Library discontinue its subscription to Government Reports Announcements tapes since this batch service is not being used as heavily as anticipated. The on-line NTIS service (available through both SDC and Lockheed) may be substituted for the GRA current awareness service, without losing service capabilities and without creating difficulties for present GRA users.

PART V - OPERATION AND MANAGEMENT OF ON-LINE COMPUTER ASSISTED INFORMATION SERVICES AT NUL SERVICE POINTS

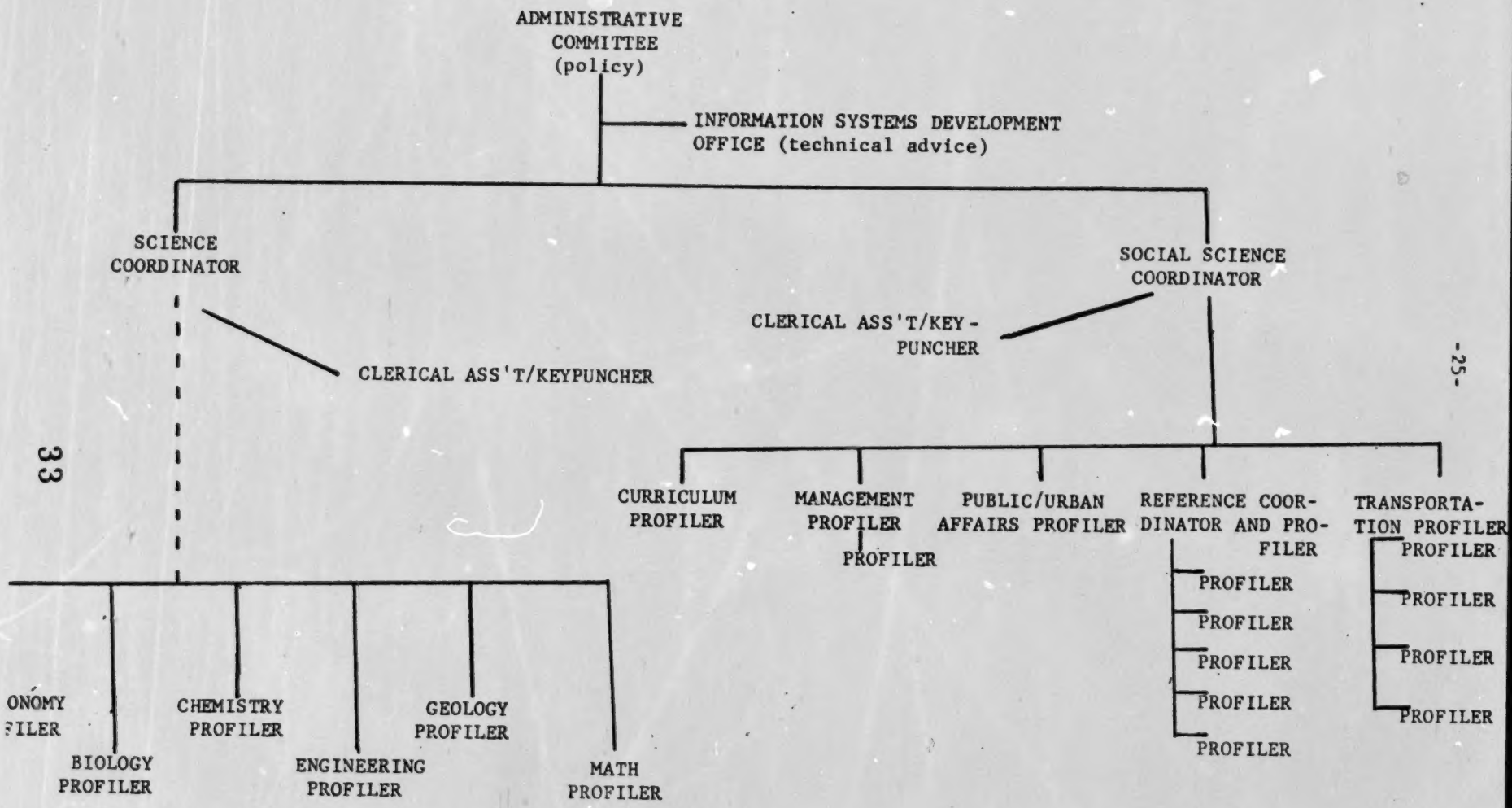
A. Introduction

To manage these information services, both batch and on-line, a division may be made between science data bases, personnel, and literature and social science data bases, personnel, and literature, following the present organization of the Library System. The NULCAIS committee recommends that the University Librarian designate two coordinators for the handling of information services, one for the sciences and the other for the social sciences. The Science Coordinator and the Social Science Coordinator will be responsible for the maintenance and development of current and future service, operating with technical advice from the Information Systems Development Office and with input from other library units affected by computer assisted information service.

This section includes an organization chart for the management of computer assisted information services at NUL in addition to recommendations for location of services, staffing, hours of use, billing arrangements, and other procedures.

PART V - cont'd. B.

ORGANIZATION CHART FOR THE MANAGEMENT OF COMPUTER ASSISTED INFORMATION SERVICES AT NUL



NOTE: The organizational structure of profilers beneath the Social Science Coordinator already exists; the structure beneath the Science Coordinator may develop when the Science-Engineering Library comes into being. All science profiles are now handled by the Information Services Librarian (Tech. Library SDI Services Office).

PART V - cont'd.

C. Sciences On-Line Computer Assisted Information Services at NUL

1. Location of Service

The provision of on-line information retrieval services for the sciences will be based in the SDI Services Office, Tech. Institute Library, continuing and expanding the information services already provided from this office for faculty and students.

Upon completion of the new NU Science-Engineering Library, the SDI Services Office will become a unit in the NUSEL Reference Department.

2. Science Coordinator

The Science Coordinator will oversee and manage services for all science departments and personnel. The Sciences Coordinator will share responsibility with the Social Sciences Coordinator for the further development and management of the computer services, with technical advice from the Technical Advisor (see organization chart under Section IV) and input from other library units as necessary.

3. Location of Computer Terminal

The computer terminal will be located in the SDI Services Office, Room 3821, Technological Institute, next door to the Tech. Library and easily accessible to sciences personnel.

4. Staffing of the Sciences Terminal

The Information Services Librarian and the SDI Assistant will operate the terminal to conduct on-line interactive searches for library clients. In NUSEL, reference librarians will operate the terminal also.

5. User Community and Charges for Service

a. On-line searches will be conducted for users from (any) all Tech. Institute departments or Research Centers, from the Biological Sciences Library/Department, the Astronomy Library/Department, the Geology Library/Department, and the Mathematics Library/Department. Users needing a "science" search, from any other NU department, will also be served at the terminal in Tech. Users from other departments who want a "social sciences" search will be referred to the Reference Department terminal.

b. Clients will be charged for the cost of the search and printouts as billed to the Library from the contracting firms.

c. Clients authorized to use NU departmental accounts may charge their literature searches to those account numbers. Clients authorized to submit charges against a research grant may charge their literature searches to that grant number, if such a charge is

PART V - cont'd.

c. (cont.) covered in the provisions of the grant. Unless other arrangements are made, other clients will pay cash or check, upon delivery of their printout(s), or at the end of negotiation with the data base in cases in which no printout is produced.

6. Hours of Service

The operators will conduct searches between 9:00 a.m. and 4:30 p.m., Monday through Friday, with possible exceptions for the lunch hour, during regular academic-session weeks. Holiday hours will vary. (Searches on data bases provided by SDC must be conducted during the hours those services are up at Santa Monica).

7. Manpower

The Tech. Library SDI Services Office is presently sufficiently staffed to initiate on-line service. The SDI Assistant will devote all of the scheduled four hours per day to conducting searches, compiling statistics, billing, processing printouts, etc. The SDI Assistant's former other job duties relating to the Tech. Library have been transferred elsewhere in the Tech. Library, to free the SDI Assistant to spend all of the time on provision and maintenance of computerized information services.

TASKS:

8. Advertise Service

The Sciences Coordinator will handle promotion of on-line services to science personnel and promotion of the science services.

9. Receive and Interview Client

The Information Services Librarian and the SDI Assistant will instruct and interview clients.

10. Write Profile for Profile History

The Information Services Librarian and SDI Assistant will maintain written copies of search requests for profile histories, as an aid to subsequent or other searches, and for records of use.

11. Operate the Terminal in the Search Strategy

The Information Services Librarian and the SDI Assistant will operate the terminal in conducting the actual search in consultation with the client. If desired and the user wants to pay the added expense, printouts from the search can be printed on-line. If on-line printouts are not desired, citations will be printed off-line and mailed by the contracting firm to the SDI Services Office.

PART V - cont'd.

12. Record Statistics for On-Line Printouts

For on-line printouts, the operator must record statistics for billing purposes on the profile form and collect payment at that time or arrange for billing to those who can be properly billed.

13. Record Statistics and Process Off-Line Printouts

For off-line printouts, the operator will indicate the SDI Services Office as the mailing address for the printouts. When the printouts are received, they will be processed by the SDI Assistant and reviewed by the Information Services Librarian. The SDI Assistant will sort printouts, record statistics, process for billing, and prepare printouts for delivery.

14. Billing

a. Users will be billed by the SDI Services Office, against a department account number or grant number. Users may pay in cash when they conduct the search or receive their printouts.

b. A record of accounts will be maintained in the SDI Services Office.

c. Journal vouchers and cash will be submitted by the SDI Office to the NUL Budget Office.

15. Review Printout

The operator who conducted the search will review the printout for relevance.

16. Deliver Printout to Client

The SDI Assistant will deliver printouts to departmental mailboxes for those clients based in the Tech. Institute or Biological Sciences. Other printouts will be sent through campus mail unless the librarian arranges other delivery by librarians to and from the Science-Engineering Libraries.

17. Consult User

The operator who conducted the search will consult the user when his/her printout has been delivered.

18. Prepare Updates or Revisions

The operator who conducted the original search will conduct revised searches, if possible. Updates of the original search can be handled by either operator.

PART V - cont'd.

D. Social Sciences On-Line Computer Assisted Information Services at NUL

1. Location of Service

a. The provision of on-line information retrieval services in the Social Sciences and eventually the Humanities will be based in the Reference Department of NUL and thereby becomes an integral part of the library's reference and information services.

b. Although most of the service in the social sciences will be based in the Reference Department, service to clients interested in business, management, and marketing, will be offered primarily by the Management Library. The Management Library can access NTIS, ABI/Inform, and the Social Science Citation Index as primary data bases for its service. It is suggested that Management use the terminal in the Transportation Library to provide this service since it is closer to them than the Reference Department. Management would also follow some of the procedures, as outlined below for the Reference Department, as they apply to the provision of service to their clients.

2. Social Science Coordinator

Within the Reference Department a Social Sciences/Humanities Coordinator will be named to oversee and manage this CAIS service.

3. Location of Computer Terminal

The computer terminal will be located in the Reference Department.

4. Staffing of the Reference Terminal

The terminal will be operated by the following library staff members in order to conduct on-line interactive searches for library clients:

a. All Reference Librarians (6)
b. Curriculum Librarian
c. Public/Urban Affairs Librarian

5. User Community and Charges for Service

a. On-line searches will be conducted for anyone affiliated with Northwestern University.

b. All clients will be charged for the cost of the search and printouts as billed to the University Library from the contracting firms.

PART V - cont'd.

c. Those clients having authorized access to an NU Departmental account number, may charge their bills to that account number. Those clients with a research grant may charge their bills to that grant. Unless other arrangements are made, other clients will pay cash (or check) on delivery of their printout(s) or, in case no printouts are forthcoming after a search, at the end of the negotiation with the data base.

6. Guaranteed Use of the Reference Department Terminal by the NUL Technical Services Division

a. In order that the Technical Services Division may conduct on-line searches of the MARC data base (provided by SDC), definite time periods, as outlined below, will be set aside for their exclusive use of the terminal. If the Technical Services Division is not using the terminal during these assigned time periods, the Reference Department can use the terminal after checking to be sure Technical Services will not need to use it that day.

b. The Technical Services Division will pay for the searches it conducts.

c. Technical Services will be guaranteed use of the Reference terminal during the following time periods (schedule subject to change once we are operational):

Monday	Wednesday	Friday
8:30 a.m.	8:30 a.m.	8:30 a.m.
to	to	to
10:00 a.m.	10:00 a.m.	10:00 a.m.

7. Hours of Service to the Reference Department's CAIS Clients

Mon.	Tues.	Wed.	Thurs.	Fri.
10:00 a.m.	9:00 a.m.	10:00 a.m.	9:00 a.m.	10:00 a.m.
to	to	to	to	to
12 noon	12 noon	12 noon	12 noon	12 noon
&	&	&	&	&
2:00 p.m.	2:00 p.m.	2:00 p.m.	2:00 p.m.	2:00 p.m.
to	to	to	to	to
5:00 p.m.	5:00 p.m.	5:00 p.m.	5:00 p.m.	5:00 p.m.

8. Clerical Assistance

a. In order to provide this service, the Reference Department will need additional clerical assistance, Monday through Friday, four hours each day, for statistical compilation, billing, processing printouts, etc.

b. This assistance can be provided by a clerk or a student assistant.

PART V - cont'd.

9. Advertise Service

The Social Sciences Coordinator will handle promotion of the on-line service.

10. Receive and Interview Client

All Reference Librarians, the Curriculum Librarian, and the Public/Urban Affairs Librarian.

11. Write Profile for Profile Historical Purposes

All Reference Librarians, the Curriculum Librarian, and the Public/Urban Affairs Librarian.

12. Operation of the Terminal in the Search Strategy

Library staff as listed in item 4 would operate the terminal and conduct the actual search in consultation with the client. If desired and the user wants to pay the added expense, printouts from the search can be printed on-line. If not, they will be printed off-line and mailed to Reference from the contracting firm.

13. On-Line Printouts

If printouts are printed on-line, the librarian must record statistics for billing purposes on the profile form and either collect payment at that time or arrange for billing to those who can be properly billed.

14. Off-Line Printouts

a. For off-line printouts the librarian will indicate the Reference Department as the mailing address for the printouts. When the printouts are received, they will be processed through the Social Sciences Coordinator. The coordinator will set up a procedure for separating and organizing printouts by the clients name, recording statistics, and preparing the billing procedure for these searches.

b. Actual processing of the printouts, recording of statistics, and billing will be handled by a Reference Department student assistant or a clerk.

15. Billing & Statistics

a. Users would be billed aginst a departmental account number or a grant number. Users can also pay in cash when they receive their printouts.

b. A record of accounts paid and unpaid, would be maintained in Reference.

PART V - cont'd.

d. Reference submits a bill to NUL Budget Office.

e. Cash also submitted there.

16. Review Printout

The librarian who conducted the search would review the printouts for relevance after they are received in the Reference Department and processed.

17. Delivery of Printouts to Client

Clients may pick printouts up at the Reference desk or they may be mailed through campus mail for those who have set up a billing procedure.

18. Consult User

Whenever possible, the librarian who conducted the search would consult with the client when he picks up his printout.

19. Preparation of Updates or Revisions

Whenever possible, the librarian who conducted the original search will conduct revised searches. Updates of the original searches can be handled automatically by the Social Sciences Coordinator or the librarian who conducted the original search.

PART VI - RECOMMENDATIONS FOR THE ACQUISITION OF THE NEW YORK TIMES INFORMATION BANK

The NULCAIS committee recommends the acquisitions of the New York Times Information Bank as an additional data base for the social sciences. The committee feels that after the Library has gained some working experience with the data bases available through SDC and Lockheed, that adding the New York Times Information Bank would be an important service to the N.U. community.

The data base of the Information Bank consists of abstracts of news and editorial matter (and occasional advertising matter if deemed of research value) published in The New York Times and selected material from approximately 65 other publications. The data base at the start of the Information Bank operations comprised New York Times material for 1970, 1971, and 1972 to date, and a selection of material from other publications for 1971 and 1972. Earlier Times material and all non-Times material within the scope of the Information Bank is being entered into the data base as rapidly as possible. Approximately 100,000 unique records, per year, of Times material will be added to the data base. The amount of non-Times material will probably equal this in current and subsequent years, but will be substantially less for preceding years.

The New York Times Information Bank can be summarized as:

1. A comprehensive, constantly updated file of information from over 65 publications
   Ranging from Business Week to The Bulletin of the Atomic Scientists, the Information Bank selects material that is relevant to our times. At the heart is the reporting of the world's affairs published in The New York Times itself. Each day several hundred stories, articles, reports, and columns are processed into the system. The Information Bank is cumulative and continuously growing. In most cases new entries are added within 72 to 96 hours of receipt of the source publication.

2. Abstracts prepared by information specialists
   The answer to a search of the Information Bank comes in the form of concise abstracts, each headed by a bibliographic citation. Abstracts appear on the screen of a cathode ray tube (CRT) terminal; they can also be printed out if desired. Abstracts range in length from one or two sentences up to three or four hundred words.

3. A precise, easy-to-use computer system
   With an hour of instruction on the CRT terminal, simple searches over the entire Information Bank file can be made. With experience, the operator can advance to highly sophisticated search techniques.

   Searches of the Information Bank by topic use common English words as index terms (descriptors).

PART VI - cont'd.

4. A direct link to the New York Times' computer
The Information Bank is on-line so that subscribers submit requests for information directly to the computer and receive an immediate answer. The telecommunications link between the video terminal and The Times' computer is either a private phone line or a switched phone connection. The choice is largely a matter of cost and volume of use.

5. Hard copy prints in addition to video display
Information Bank subscribers are furnished with a high-speed printer which is connected to their CRT video terminal. The printer creates collections of abstracts on special topics while operating at speeds up to 165 characters per second.

The Information Bank is sold on an annual subscription basis. Due to a change in Information Bank software, subscribers are no longer required to purchase or lease a CRT terminal from The New York Times, but may now use their own institution's compatible terminal. In addition, The Times will provide formal two day training classes when a subscription begins. Training aids, including user manuals and the printed Thesaurus of Descriptors, will be furnished and supplementary guidance will also be given as needed. Other expenses to the subscriber are noted on the following photocopy of an information sheet released by the New York Times Information Bank, entitled: "Subscription Rates and Other Terms." Photocopies of an Information Bank release on "Communications and Terminal Equipment" and a letter dealing with these topics, are also included.

The New York Times Information Bank

Subscription Rates and Other Terms

July 1974

I. TERM

If Subscriber provides his own terminal, the subscription is for a minimum of 6 months. After 6 months, the subscription continues automatically unless canceled. 30 days' prior written notice is required for cancellation.

If Subscriber has The Times lease the terminal for him, the subscription must be for a minimum of 1 year. Renewals will be automatic, and also for a period of 1 year, unless 30 days' prior written notice of cancellation is given.

II. START-UP PERIOD

The start-up period is defined as the first 2 months of a subscription, starting when the installation is certified to be operational.

Unlimited access is permitted during the days and hours of normal operation (Monday through Friday, 8 A.M. to 12 midnight, eastern time, major holidays excepted; also most Saturdays, 9 A.M. to 5 P.M.).

A flat amount of $625 per month is charged to cover costs of installation, start-up and training.

III. TERMINALS AND OTHER EQUIPMENT

Terminals may be selected from among the models specified by The Times as compatible with The Information Bank system.

Terminals may be purchased or leased by Subscriber, or leased by The Times on behalf of Subscriber. Costs may vary with specific terminal and printer models and with specific communications devices and facilities.

Typical costs are:

Incoterm CRT terminal	
SPD 10/20 monthly rental	$163
Centronics printer monthly	$133
Maintenance for each of the above monthly	30
Telephone data sets (Modems):	
For leased-line connections monthly	55
For dial-up connections monthly (approximate figure)	115

Above prices are as of this date and are given as samples only.

Microfiche readers or reader-printers are not marketed by The Times. (A variety of models ranging in price from $100 to over $2,000 are available.)

IV. COMMUNICATIONS

May be provided by Subscriber; or

May be arranged with a common carrier through The Times; or

May be provided by The Information Bank through its network as part of the service. However, The Times reserves the right not to provide network service to a given location, or to discontinue service to a given location upon adequate notice. Network communications are available only in the Continental U.S.

V. SUBSCRIPTION RATES

Rates are effective at the start of the third month of subscriptions (see Section II) and do not include costs of terminals and other equipment (see Section III), communications costs (unless communications are provided through The Information Bank network as part of the service), and the costs of microfiche.

Rates vary with the number of hours of usage (connect time) according to the following table:

Without Communications Per Minute

Hours/ Month	All Zones
First 10	$.75
Second 10	.68
Third 10	.63
Fourth 10	.58
Fifth 10	.54
Over 50	.50

Rates for service including communications will be supplied on a location-by-location basis.

Access is at any time that the system is in operation.

Subscribers will be billed a minimum of 4 hours of service per month.

Flat-rate Option:
Subscribers may contract for up to 25 hours of service per month at a flat rate of $875. Additional hours may be purchased on a connect-time basis in accordance with the rate schedule above.

VI. MULTIPLE SUBSCRIPTIONS

On second and subsequent subscriptions by the same subscriber, whether or not for the same locations, hours logged on all terminals will be pooled for billing purposes.

VII. RE-SALE OF SERVICE

Special terms may be arranged for subscribers wishing to re-sell Information Bank materials.

VIII. MICROFICHE

Microfiche of The New York Times is available to subscribers at $75 a month. Sets for past years (1969-1973) are available at $600 a year.

The New York Times Information Bank

Communications and Terminal Equipment

July 1973

COMMUNICATIONS:
Communications facilities can be provided by the subscriber or arranged for by The New York Times at the subscriber's request and billed to the subscriber. There are two types of communications facilities available: private line or dial-up.

Private Line:
Bell System type 3002 or equivalent, C2 conditioning, 4-wire full duplex, operating in half duplex mode.

Modems: Bell System 201B3 or equivalent, operating at 2400 bits per second.

Dial-up:
Bell System DDD network, 2-wire half duplex.

Modem: Bell System 201A or equivalent operating at 2000 bits per second, with alternate voice capability.

TERMINAL EQUIPMENT:
The Information Bank is designed to be accessed through an Incoterm SPD 10/20 CRT display terminal.

Printouts from the screen are made on an Incoterm SPD-P 165A

	Display SPD 10/20	Printer SPD-P165A
Phase	Single	Single
KVA	0.400	0.500
Heat Dissipation (BTU/Hr.)	960	1200

SITE PLANNING AND PREPARATION:
The subscriber, at his expense, shall have the site prepared for installation of the equipment, in accordance with the site specifications, at least fifteen days prior to the effective service date (or the date specified in the subscription contract).

Environmental Considerations:
Normal room temperature and relative humidity, that is 32-90° F and 10-90% humidity without condensation.

The terminal equipment should not be placed on any surface that experiences a high vibration level, and should be placed so that it is well vented.

Conditions producing static electricity should be avoided.

Cabling:
Cables should be routed so that they are not subject to heavy foot traffic, or to being pinched or chafed by other equipment. If cables must be routed across areas of heavy traffic, a protective cover should be placed over the cables.

Cables should not be placed adjacent to sources of electromagnetic noise that may be induced into either the power or communications cables.

POWER REQUIREMENTS:
The terminal can be operated from 105-125V, 60Hz, A/C power source. The line tolerance must be maintained within ±10% of the nominal values, and 50/60Hz line frequencies should not vary more than ±1Hz. Particular attention should be given to proper grounding at the power supply input. Primary power to the display and peripheral devices should be provided on a line separate from lighting, air conditioners, etc., to insure that equipment operation will not be affected by voltage surges or fluctuations.

The display and peripheral power cables must terminate in straight 3-prong wall receptacles. Three receptacles are required for each display/printer/modem set.

MODIFICATIONS, ALTERATION, AND ATTACHMENTS:
The subscriber may not make alterations or modifications or install attachments to the equipment without prior written consent of The New York Times.

The New York Times
229 WEST 43 STREET
NEW YORK, N.Y. 10036

August 5, 1974

Mr. Guy Westmoreland
Reference Librarian
Northwestern University Library
Evanston, Illinois 60201

Dear Mr. Westmoreland:

Many things have happened to The Information Bank since October, 1973. While our service has remained unchanged, our subscription rates have been restructured and our hardware and communications requirements have been relaxed.

Enclosed please find a copy of our brochure. In the back pocket you will find an explanation of our new costs, and new communications and terminal requirements. As you will see, we now can interface with the Incoterm SPD 10/20, the Hazeltine 2000, the Bendix Logiport, and the Tektronics. We are also TTY compatible operating at 1200 BAUD. What kind of a unit do you presently use? Perhaps we could test it out.

I hope that you will contact me if you have any questions about this. I can be reached at (212) 556-1052.

Sincerely,

Sally Bachelder

Sally Bachelder
The Information Bank

SB/kf
Encl

APPENDIX A - MACHINE-READABLE DATA FILES AT NORTHWESTERN UNIVERSITY: A PROFILE

The purpose of this report is to identify the subject areas of machine-readable data files at both campuses of Northwestern University, excluding the Library. Since this equates largely with the subject areas of persons generating data files, a search was undertaken to identify the departmental affiliations of these persons. If the Library should become interested in offering some assistance to potential users of privately-held data files, the resulting subject profile could serve as a starting point for identifying specific data files. This report also identifies those bibliographic data files being serviced at areas other than the Library, and by default, which data files are not available within Northwestern.

The information in this report was gathered by conversations with persons at the Chicago campus libraries, Vogelback Computing Center, and by reviewing a file of the Vogelback Computing Center Newsletters for the last four years.

The report is divided into five sections: bibliographic data files serviced by the Dental Library, bibliographic data files serviced by Vogelback, statistical data files serviced by Vogelback, subject areas of data files at Northwestern, and a conclusion.

The Dental Library at Northwestern is presently serving the University's dental, medical and nursing community with on-line service to the set of bibliographic data files offered by the National Library of Medicine. These data files include MEDLINE, SDILINE, CATLINE and SERLINE. No additional data file services beyond those offered from the National Library of Medicine are planned at this time.

The MEDLINE data file contains bibliographic data for 1,100 - 1,200 of the most frequently used journals in dentistry, medicine and nursing cited in Index Medicus. Entries are for the most recent three years. The data file is useful for literature searches of recent work.

SDILINE is the National Library of Medicine's first on-line data file; it contains the most recent month's additions to Index Medicus, Index to Dental Literature and International Nursing Index. The data file's size is about 17,000 citations for approximately 2,200 titles.

The CATLINE data file includes bibliographic data for monographs, reports and a few periodicals cataloged by the National Library of Medicine in the past few years. The format is similar but not identical to MARC. Besides providing information for technical services functions, CATLINE has been used in literature searches; it compliments MEDLINE by providing monograph and report coverage by subject.

The SERLINE data file is a serials holding file, by regions of the United States. The Dental Library sees locations for serials in the states of Illinois, Iowa, Minnesota, North Dakota and Wisconsin. Holdings are by title only, and do not detail specific pieces held.

The Dental Library does not plan to expand its services to include the data files offered by System Development Corporation or Lockheed Corporation. Some of the search requests the Dental Library receives are for subjects which might be covered more fully by data files considered or already offered by the Library--psychology and chemistry, for example. The NULCAIS members should keep the Dental and Medical Libraries posted of data files available through the Library, and the procedures for using them..

The Vogelback Computing Center presently services about ten bibliographic data files. A number of these are very limited--by way of example, the NTIS data file contains only 1,728 records, representing a part of the 1969 entries. All data files are accessed through the TRIAL or RIQS retrieval programs at Vogelback.

One of the major bibliographic data files is the SDI data file, which covers social science periodicals. Dates are from 1966 to the present; about 5,650 records are in the data file. The file is updated irregularly. Another data file is BIB, which contains about 10,835 citations from social science journals, technical reports, government publications and book reviews. The contents date from 1951 to 1969. A data file that especially reflects Northwestern's orientation is AFRICA, about 12,300 records containing citations to articles on modern Africa. Coverage is from about 1955 to 1970; no updates are planned.

The SPIN data file includes about 6,227 records which are citations of physics journal articles. The data file is static in size; the years 1969 - 1970 are represented. The NULIB data file contains a citation and abstract of all computer-related texts in the Northwestern University Library. Locations and call numbers are included. Finally, the CODEBOOK data file cites the codebooks which describe most quantitative social science studies done at Northwestern. (A codebook describes the coding of data, researchers, source of data, dates of the work, and other information necessary to use a data file.) The data file is small, containing about 138 records.

The NULCAIS members should note the SDI and BIB data files, since these might help users of the Main Library, who may not be aware of this service at Vogelback. Also, should the Library increase its data file services, a clarification of the agreement between Vogelback and the Library may be in order--it was earlier agreed that Vogelback would service statistical data files and the Library bibliographic data files.

The Vogelback Computing Center has collected about 380 statistical data files and is making them available for reuse. Some of these data files have been donated by Northwestern faculty, staff or students; others are from the Inter-University Consortium for Political Research or other data archives. The documentation of the data files is uneven. Topics include demography, education, roll call votes and religion.

A listing of these data files is provided in Borman and Hay's Data Resources for the Social Sciences.[1] This work also describes the bibliographic data files serviced at Vogelback and the U. S. census data available at Vogelback.

It should be noted that the Computing Center is offering the only library service of statistical data files at Northwestern at this time. If the role of the Library includes assisting potential users of this type of information, albeit in nonprint form, a later topic for NULCAIS to consider might be the Library's role with respect to statistical data files.

A review of the persons using Vogelback for project work in the last four years yielded the following profile of data files by subject area on the Northwestern campuses:

Law
Dental
Medicine - pharmacology, physiology, psychology, surgery
Music
Speech
Education - counseling, psychology
Management - finance, marketing, organizational behavior, political environment
Physical sciences - astronomy, chemistry, engineering (chemical, computer science, medical, civil, industrial, electrical, mechanical, materials science), geology, mathematics, physics
Social sciences - African-American studies, anthropology, economics, geography, history, political science, psychology, linguistics, sociology

This profile contains no surprises; those areas that one would expect to produce data files are doing so.

1
Borman, Lorraine and Hay, Richard Jr. Data Resources for the Social Sciences. Evanston, Ill.: Vogelback Computing Center, Northwestern University, 1974.

Several conclusions result from this review of data files at Northwestern. First, a variety of data files exists on the two campuses, and the data files are distributed in the departments that would be expected to produce data files. Second, the bibliographic data file services available outside the Library are limited and not highly visible, except at the Dental Library. Third, no one is actively servicing the data files offered by commercial vendors. Fourth, a topic for later consideration by the Committee is the Library's role with respect to assisting users of statistical data files.

APPENDIX B - SELECTIVE SURVEY OF COMPUTERIZED DATA BASE SEARCH SERVICES IN THE CHICAGO AREA, August 8, 1974.

The following list is divided into three sections: Data Bases Available to N. U. Users, Data Bases Available But Not to Outside Users, No Data Bases Available. The information was gathered by means of a telephone survey of the libraries and information centers listed on August 7th and 8th, 1974.

DATA BASES AVAILABLE TO N.U. USERS

Illinois Institute of Technology
IIT Research Institute (IITRI)
Computer Search Center (CSC)
10 W. 35th St.
Chicago, Ill. 60616
225-9630 (ask for Computer Search Center)

Contact: Pat Llewellen
Comment: Data base searches open to all on a fee basis (price list will be sent to NULCAIS). Current awareness batch searches of CHEM Abstracts, Engineering Index, Biological Abstracts, Food Science and Technology Abstracts. On-line searches using SDC and Lockheed services.

John Crerar Library
Research Information Service (RIS)
35 W. 33rd St.
Chicago, Ill. 60616
225-2526

Contact: Ammiel Prochovnik, Research Services Librarian
Comment: Data base searches available to all. Have SDC and Lockheed arrangements. Sampling of data bases and prices: MEDLINE--$7.50 for up to 5 pages of printout, 50 cents for each additional 5 pages; COMPENDEX, INSPEC, SCI SEARCH--$100 for first 100 citations, $20 for each additional 100 citations; CHEM CONDENSATES, NTIS, Psych. Abstracts, CAIN--$70 for up to 100 citations, $10 for each additional 100 citations. Mr. Prochovnik prefers SDC to Lockheed service for ease of searching.

Lutheran General Hospital
1775 Dempster St.
Park Ridge, Ill. 60068
696-5494

Contact: Joanne Crispen, Head Librarian
Comment: MEDLINE available to outside users--minimum charge is $7.50 for 25 citations; charge is negotiable for any additional citations.

DATA BASES AVAILABLE TO N.U. USERS (con't.)

National Safety Council
425 North Michigan Ave.
Chicago, Ill. 60510
527-4800, Ext. 312

Contact: Miss Hammersmith, Head Librarian
Comments: Keyword search of partial holdings file (excluding books). Indirectly available to all inquirers since the library often uses their service to answer reference questions.

University of Illinois at the Medical Center
Library of the Health Sciences
1750 W. Polk
P.O. Box 7509
Chicago, Ill. 60680
996-8993

Contact: Mrs. Hirschfeld, Head of Information Services
Comments: No user restrictions. Data bases available are TOXLINE ($15 per hour); ERIC ($15 per hour); Psych. Abstracts ($15 per hour); MEDLINE and SUNY Biomedical Communication Network Search Service (both, $2 for first 25 citations, 10 cents for each 7 thereafter). Each search request requires a $2 deposit. To request a search contact CHESTER PLETZKE, Midwest Regional Health Sciences Library Network, John Crerar Library.

DATA BASES AVAILABLE BUT NOT TO OUTSIDE USERS

Abbott Laboratories
Abbott Information Services
Dept. 441
14th Street and Sheridan Road
North Chicago, Ill. 60064
688-2514

Contact: Abbott Information Services staff
Comment: Data base services not available to outside users.

American Medical Association
Archive-Library
535 No. Dearborn St.
Chicago, Ill. 60614
751-6000 (Ask for Archive-Library)

Contact: Librarian
Comments: MEDLINE available to AMA members only.

DATA BASES AVAILABLE BUT NOT TO OUTSIDE USERS (con't.)

DeSoto, Inc.
Information Center
1700 South Mt. Prospect Rd.
Des Plaines, Ill. 60018
296-6611

Contact: Information Center staff
Comment: Scientific data bases available only to DeSoto employees.

Moraine Valley Community College
10900 South 88th Ave.
Palos Hills, Ill. 60465
974-4300, Ext. 274

Contact: Carol Nyberg, Office of Institutional Research
Comments: Research Office does ERIC searches which are only available to college Staff. Library has no data bases available.

Northeastern Illinois Planning Commission
Data Center
10 So. Riverside Plaza
Chicago, Ill. 60606
454-0400 (Ask for Data Center)

Contact: Research Librarian
Comments: Participating in TRISNET project through N.U.'s Transportation Center Library.

Real Estate Research Corporation
2 W. Adams St.
Chicago, Ill. 60603
346-5885

Contact: Frances Sontag, Librarian
Comments: Computer access to company reports for use of corporation staff only.

G.D. Searle and Company
Technical Services Section
Corporate Library
Searle Parkway
Skokie, Ill. 60076
982-7000, Ext. 2141

Contact: Nancy Schneider, Head Librarian
Comment: Corporate Library does not do searches. Searches handled by Dept. of Corporate Information Services for Searle staff only.

DATA BASES AVAILABLE BUT NOT TO OUTSIDE USERS (con't.)

University of Chicago
Joseph Regenstein Library
1100 E. 57th St.
Chicago, Ill. 60637
753-2977

Contact: Regina Kram, Reference Department
Comments: Terminals throughout library are planned to access circulation and acquisitions records. May be operational in Winter Quarter, 1975. Several departments within university have access to data bases, but for the use of the individual department only. Census tapes, Psychological Abstracts, etc. ROBERT MILLER, Library Office, chaired the Library's "Data Base Committee." The committee's report was due last October but never completed. Committee is presently inactive.

NO DATA BASES AVAILABLE

Illinois Institute of Technology
Kemper Library
3300 South Federal Street
Chicago, Ill. 60616
225-2526 (Ask for Kemper Library)

Contact: Reference Librarian
Comment: No data bases available.

Institute of Gas Technology
3424 South State St.
Chicago, Ill. 60616
225-9600, Ext. 622

Contact: Ann Roess, Supervision of Library Services
Comments: Planning to use data bases in future. User restrictions have not been determined yet.

Metropolitan Sanitary District of
Greater Chicago
100 E. Erie St.
Fifth Floor
Chicago, Ill. 60611
751-5782

Contact: Joyce Bohon, Technical Librarian
Comments: No data bases available.

NO DATA BASES AVAILABLE (con't.)

Morton-Norwich Products, Inc.
Woodstock Information Center
1275 Lake Ave.
Woodstock, Ill. 60009
(815) 338-1800

Contact: Margaret McCabe, Head Librarian
Comment: No data base services available.

Super Market Institute
Information Service
200 E. Ontario St.
Chicago, Ill. 60611
467-7150 (Ask for Information Service)

Contact: Information Service Dept. staff
Comment: No data bases available.

Swift and Company
R&D Information Center
1919 Swift Drive
Oak Brook, Ill. 60521
325-9320

Contact: Marcus Bornfleth, Research Librarian
Comments: Searle's comprehensive library serves the company's needs, which are largely retrospective. As computerized data files continue to grow, will probably use them more in the future.

U.S. Railroad Retirement Board
844 Rush St.
Chicago, Ill. 60616
944-5500 (Ask for library).

Contact: Librarian
Comment: No data bases available.

University of Health Sciences
2020 W. Ogden Ave.
Chicago, Ill. 60612
226-4100, Ext. 380

Contact: Nancy Corn, Reference Librarian
Comment: No data bases available.

NO DATA BASES AVAILABLE (con't.)

University of Illinois at Chicago Circle
Main Library
801 South Morgan St.
P.O. Box 8198
Chicago, Ill. 60680
996-2726 (Refernece)

Contact: Mr. Schultheiss, Head of Technical Services; Miss Stike, Science Librarian
Comment: No data bases available in Main Library.
No data bases available in Science Library. Science Library entered into a pilot project with IITRI but dropped it because of lack of user interest and costs. Science Library may reevaluate its position but has no specific plans.